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APPLICATION NO.	FILING DATE	FIRST-NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/735,246	12/11/2000	Kevin P. Godfrey	253/300	7602

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EXAMINER

HUYNH, KIM T

ART UNIT PAPER NUMBER

2112

DATE MAILED: 12/23/2003

9

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/735,266

Applicant(s)

GODFREY, KEVIN P.

Examiner

Kim T. Huynh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-23 is/are allowed.
- 6) ☒ Claim(s) 24-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 December 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 24-35 rejected under 35 U.S.C. 103(a) as being unpatentable over Stewart et al. (US Patent 5,557,764) in view of Kenner et al. (US Patent 5,903,749)

As per claims 24, 30, Stewart discloses a system for handling interrupts in a processor-controlled device, said processor-controlled device comprising a processor executing a software program stored as a set of program instructions, the system comprising:

- an interrupt vector store; (fig.2, 32), abstract)
- an interrupt controller connected a plurality of interrupt request signals, said interrupt controller outputting a master interrupt signal; and (col.2, lines 6-14)
- a selector in a controlling arrangement with said interrupt vector store and with a memory storing program instructions being executed by the processor, said selector causing the processor to receive the next program instruction when the master interrupt signal is not asserted, and to receive an interrupt vector from the

interrupt vector store when the master interrupt signal is asserted, the interrupt vector comprising a branch instruction op-code and address. (col.2, lines 6-17)

Steward discloses all the limitations as above except the interrupt vector comprising a branch instruction op-code and address. However, Kenner discloses the opcodes for the branch and preload instructions include a bit that indicates if the opcode is valid or invalid. (col.12, lines 25-46)

It would have been obvious to one having ordinary skills in the art at the time the invention was made to incorporate Kenner's teaching into Steward's method so as can improve performance by exposing simultaneously executable instructions. (col.1, lines 20-24)

As per claims 25, 31, Stewart discloses interrupt vector is provided directly to an execution unit of the processor. (fig.2, 20), abstract)

As per claims 26, 32, Stewart discloses interrupt vector store is dynamically loaded with one or more interrupt vectors when the processor is running. (col.5, lines 53-65), (col.3, lines 22-26)

As per claims 27, 33, Stewart discloses interrupt vector store is statically pre-loaded with one or more interrupt vectors. (fig.4, 132), abstract)

As per claims 28, 34, Stewart discloses processor is connected to a system bus, and wherein said selector causes the processor to receive the next program instruction by asserting a first select signal connected to said memory storing said program instructions when the master interrupt

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signal is not asserted, and causes the processor to receive said interrupt vector from the interrupt vector store by asserting a second select signal connected to said interrupt vector store when the master interrupt signal is asserted. (col.2, lines 6-17)

As per claims 29, 35, Stewart discloses interrupt vector store comprises a plurality of interrupt vectors, each interrupt vector corresponding to a different interrupt request signal. (col.2, lines 6-17)

Allowable Subject Matter

3. Claims 1-23 are allowable.

The following is an examiner's statement of reasons for allowance:

Applicant's claimed invention is deemed allowable over the prior art of record as the prior art fails to teach or suggest a selector, responsive to the processor's cycle type signal, for selecting between a program code instruction from the program store and an interrupt vector from said interrupt vector store to be loaded directly into an execution unit of the processor in combination with other limitations as recited in independent claims and further in view of the specification and applicant's arguments.

Response to Arguments

4. Applicant's amendments filed on 9/2/03 have been considered but are moot in view of the new ground(s) of rejection.

In response to applicant's argument that Stewart does not disclose the interrupt vector comprising a branch instruction op-code and address. However, However, Kenner discloses the opcodes for the branch

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and preload instructions include a bit that indicates if the opcode is valid or invalid. (col.12, lines 25-46). Thus, the prior art teaches the invention as claimed and the amended claims do not distinguish over the prior art as applied; they are moot in view of the new ground(s) of rejection.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6. *Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kim Huynh whose telephone number is (703)305-5384 or via e-mail addressed to [kim.huynh3@uspto.gov]. The examiner can normally be reached on M-F 8:30AM-6:30PM.*

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Rinehart can be reached on (703) 305-4815 or via e-mail addressed to

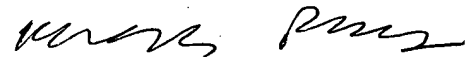
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[mark.rinehart@uspto.gov]. The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9306 for regular communications and After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)306-5631.

Kim Huynh

Dec. 9, 2003



Khanh Dang
Primary Examiner